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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/618,197

07/11/2003

Taketo Tsukioka

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4263

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7590

12/15/2006

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EXAMINER

SELBY, GEVELL V

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/618,197

Applicant(s)

TSUKIOKA, TAKETO

Examiner

Gevell Selby

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Kakarala et al., US 2003/0052981.**

In regard to claims 1 and 5, Kakarala et al., US 2003/0052981, discloses an image processing device and image processing program comprising:

input means (see figure 1, element 20) for inputting an digital image wherein one or more color components are non-existent in each pixel, obtained from a single-sensor image-pickup system, a double-sensor image-pickup system, or a triple-sensor pixel spatial offset image-pickup system (see para. 29);

combination average calculation means (see figure 1, element 40) for making a combination of two or more pixels from a plurality of pixels having the same color component near the pixel of interest within the image signals input

from the input means, and calculating the average for the combination of the color components of two or more pixels for a plurality kinds of combinations of pixels in the region near the pixel of interest (see para. 44);

color correlation estimation means (see figure 4, element 42) for estimating color correlation which is a correlation between different color components within the region near the pixel of interest (see para. 35); and

combination selection means (see figure 4, element 40) for selecting one of the plurality of combination averages calculated by the combination average calculation means, as the non-existent color component for the pixel of interest, based upon the color correlation estimated by the color correlation estimation means (see para 74-79).

In regard to claims 2 and 6, Kakarala et al., US 2003/0052981, discloses the image processing device and image processing program according to claims 1 and 5, wherein the combination average calculation means further calculates the fluctuation of the color component within the combination of two or more pixels (see para. 72-73: the fluctuation of the color component in the neighborhood vote data is considered); and

wherein the color correlation estimation means further calculates the reliability of the estimated color correlation (see para. 68-71); and

wherein, in the event that the reliability calculated by the color correlation estimation means is high, the combination selection means estimates the non-existent color component for the pixel of interest based upon the estimation results of the color correlation and the color component obtained in the pixel of interest, and selects the

combination average which is the closest to the estimated non-existent color component candidate as the non-existent color component (see para. 68-71: highest weighing is given to the combination with the most votes), and in the event that the reliability is low, the combination selection means selects the combination average corresponding to the combination wherein the fluctuation of the color component calculated by the combination average calculation means is the least, as the non-existent color component (see para. 75-76: less fluctuation in the neighboring pixels, increases the voting wherein the highest weighing is given to the combination with the most votes).

In regard to claims 3 and 7, Kakarala et al., US 2003/0052981, discloses the image processing device and program comprising:

input means (see figure 1, element 20) for inputting an digital image wherein one or more color components are non-existent in each pixel, obtained from a single-sensor image-pickup system, a double-sensor image-pickup system, or a triple-sensor pixel spatial offset image-pickup system (see para. 29);

first non-existent color component generating means (see figure 1, element 40) for making a combination of two or more pixels from a plurality of pixels having the same color component near the pixel of interest within the image signals input from the input means, calculating the average for the combination the color components of two or more pixels for a plurality kinds of combinations in the region near the pixel of interest, and selecting one of the calculated averages so as to generate the non-existent color component (see para. 44);

second non-existent color component generating means (see figure 2, element 42 adaptive interpolation logic) for estimating the color correlation which is a correlation between different kinds of color components near the pixel of interest for each pixel, and generating the non-existent color component based upon the estimated color correlation and the color component obtained in each pixel (see para. 66-70);

evaluation means (selection mechanism) for evaluating the reliability of the color correlation estimated by the second non-existent color component estimation means (see para 71); and

third non-existent color component generating means for setting the weight ( $\alpha$ ) as to the non-existent color component generated by the second non-existent color component generating means based upon the reliability evaluated by the evaluation means, and calculating the weighted average for the non-existent color component generated by the first non-existent color generating means and the non-existent color component generated by the second non-existent color component generating means using the set weight, thereby generating the non-existent color component value (see para. 75-76).

In regard to claims 4 and 8, Kakarala et al., US 2003/0052981, discloses the image processing device according to claims 3 and 7, respectively, further comprising region judgment means for making judgment whether or not the region near the pixel of interest is a texture region, and also making judgment whether or not the region near the pixel of interest is an edge region, wherein in the event that judgment is made by the

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region judgment means that the region is a texture region, the evaluation of the reliability is increased, and conversely in the event that judgment is made that the region is an edge region, the evaluation of the reliability is decreased (see para 70).

### *Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,116,842, discloses an image processing method and apparatus that performs a first or second interpolation according to a judgment unit.

US 2001/005429 discloses an interpolation processing apparatus with a similarity degree calculation unit.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs

  
TUAN HO  
PRIMARY EXAMINER